

## INTERSTATE COMMERCE COMMISSION.

## REPORT OF THE CHIEF OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NORTHERN PACIFIC RAILWAY AT WELCH, MONT., ON MARCH 17, 1922.

April 22, 1922.

To the Commission:

On March 17, 1922, there was a head-end collision between two passenger trains on the Northern Pacific Railway at Welch, Mont., resulting in the death of 1 employee and 1 trespasser, and the injury of 40 passengers and 6 employees. This accident was investigated in conjunction with a representative of the Board of Railroad Commissioners of Montana.

## Location and method of operation.

This accident occurred on that part of the Montana Division extending between Logan and Butte, Mont., a distance of 71 miles, which in the vicinity of the point of accident is a single-track line over which trains are operated by time-table, train orders, and a manual block-signal system. The accident occurred on the main track, about midway between the west and east switches of the siding at Welch, at a point 1,433 feet east of the west switch; approaching this point from the west there are 1,602 feet of tangent, an 8-degree curve to the right 671 feet in length, extending nearly to the west switch, then 715 feet of tangent, followed by a 6-degree 36-minute curve to the left 2,467 feet in length, the accident occurring on this curve at a point approximately 770 feet from its western end. The grade at the point of accident is 1.94 per cent descending for eastbound trains. Owing to rock cuts, the view is much restricted. The accident occurred at about 7.51 a.m., at which time it was snowing and foggy.

## Description.

Westbound passenger train No. 1 consisted of 1 mail car, 1 baggage car, 1 smoking car, 1 coach, 1 tourist car, 1 dining car, 3 Pullman sleeping cars, and 1 observation car, all of all-steel construction, hauled by engines 1750 and 2225, and was in charge of Conductor Thomas and Engineer Barry and Dean. At Whitehall, 16.5 miles from Welch, the crew received an order, No. 209, form 19, to meet train No. 220 at Welch, train No. 220 to take siding, and at Spire Rock, an open telegraph office 4.6 miles east of Welch, received a caution card calling attention to the meet with train No. 220 at Welch. Train No. 1 was approaching the west switch of the siding at Welch, prepared to stop, when it was

struck by train No. 220.

Fastbound passenger train No. 230 consisted of 1 baggage car, 1 smoking car, and 1 day coach, all of wooden construction, hauled by engine 2120, and was in charge of Conductor Stephens and Engineman Nielsen. At Butte the crew received a copy of train order No. 209, form 19, previously referred to.

Train No. 230 left Butte at 7.00 a.m., on time, and at Homestake, 10.3 miles distant, the crew received a block clearance card stating that the block was not clear and to be governed by caution card No. 3, which card contained instructions to meet train No. 1 at Welch in accordance with train order No. 209; there was also a message addressed to Engineman Nielsen stating that, "No. 1 should be waiting at Welch abt 7:50 AM", and also a copy of train order No. 210, form 19, reading as follows:

"No 230 Eng 2120 take  
siding meet No. 651  
Eng 1758 at Spire Rock".

On reaching Welch, instead of heading in on the siding at the west switch, train No. 230 continued on the main track and collided with train No. 1 while traveling at a speed estimated to have been between 15 and 20 miles an hour.

All three engines were considerably damaged and the baggage car of train No. 230 was telescoped by the following car for a distance of about 35 feet. The employee killed was the fireman of train No. 230.

#### Summary of evidence.

As train No. 230 was being brought to a stop at Homestake, a copy of train order No. 210, together with the caution card, clearance card and message previously referred to, were delivered by hoop to Fireman Caldwell, who was also a qualified engineman. While Fireman Caldwell was reading the orders, the engineman inquired as to the meeting point with train No. 1 and was informed it had been changed to Spire Rock, this being 4.6 miles east of Welch. Although the orders were handed to Engineman Nielsen immediately after this conversation, he did not read them but accepted the information imparted to him by Fireman Caldwell as correct, folded the orders, and placed them in his pocket with the intention of reading them later, however, he neglected this duty on account of becoming engrossed in keeping a sharp lookout for fallen rocks, in compliance with orders received before leaving the initial terminal. Engineman Nielsen said a number of service air-brake applications were made between Homestake and Welch,

a distance of 6.1 miles, and that the brakes were working properly, although he cut out the driving-wheel brakes while on the descending grade in order to prevent the tires from overheating and slipping, cutting the brakes in again when stops were being made. Of these applications, one was made in the vicinity of the mile board, west of Welch, at which point three blasts of the conductor's communicating signal were sounded and the whistle acknowledgment sounded, another before the west switch of the siding was reached, and still another after the entire train was east of the switch, this being in preparation for the stop at the station at Welch; Engineman Nielsen made no release from this last application but immediately moved the brake valve to the emergency position when he heard train No. 1 approaching from the opposite direction, his vision being limited to about 3 car-lengths on account of the inclement weather. He did not think this emergency application had the desired effect, as the speed of the train did not seem to be materially reduced before the collision occurred. He had not cut in the driving-wheel brakes. Engineman Nielsen further stated that under the rules three blasts of the conductor's communicating signal, received when the train is running, denoted either a meeting point with a train of the same or superior class, or a stop at the next station, and as he was of the impression the meeting point with train No. 1 had been changed from Welch to Spire Rock, he interpreted the communicating signal as meaning to stop at Welch, therefore, instead of heading the train in at the west switch of the siding, it was continued on the main track with the intention of bringing it to a stop opposite the station at Welch.

Conductor Stephens had Brakeman Steichen, who was standing beside him, sound the communicating signal for the purpose of notifying Engineman Nielsen of the meeting point at Welch; the air-brake application that was made in advance of the west switch gave both of these employees the impression the engineman was preparing to head the train in at the west switch, and when the brakes were released they thought train No. 1 had arrived and lined up the switches, as had been done on the previous day. Conductor Stephens was riding in the front end of the smoking car approaching the siding and did not realize the train was proceeding on the main track until shortly after the switch had been passed; he immediately pulled the communicating signal, the emergency valve being in the opposite end of the car. The first knowledge Brakeman Steichen had of anything wrong was when the accident occurred.

Train No. 1 was proceeding at a low rate of speed for the purpose of making a stop at the west switch when Engineman Barry and Dean saw the stack of the engine of train No. 230 coming through the rock cut; Engineman Barry at first thought the opposing train was on the siding and began

to work steam, however, he immediately afterwards realized it was on the main track and applied the brakes in emergency just before the accident occurred.

Conclusions.

This accident was caused by the failure of train No. 230 to head in at the west switch at Welch in accordance with train order No. 209, for which Engineman Nielsen is primarily responsible.

There seems to have been a misunderstanding between Engineman Nielsen and Fireman Caldwell as to train order No. 210, the engineman understanding the fireman to say the meet with train No. 1 at Welch had been changed to Spire Rock, the next station to the east. But regardless of this misunderstanding, the primary responsibility rests on Engineman Nielsen for his action in placing the order in his pocket without reading it or knowing anything of its contents except what had been told him by the fireman; no excuse can be offered for such negligence. No statement could be obtained from Fireman Caldwell prior to his death.

The employees involved were experienced men; at the time of the accident they had been on duty less than 8 hours, after having been off duty 9 hours or more.

Respectfully submitted,

W. P. BORLAND,

Chief, Bureau of Safety.